Permit Fact Sheet

General Information

Permit Number:	WI-0031828-08-0	
Permittee Name:	Liberty Sanitary District No. 1	
Address:	9503 Pigeon Lake Rd	
City/State/Zip:	Valders WI 54245	
Discharge Location:	14333 Cty Hwy F, Valders, WI (NW ¼, NE ¼, Section 4, Township 17 (Meeme), Range 22)	
Receiving Water:	Groundwaters of the Pigeon River Watershed, in the Sheboygan River Basin, in Manitowoc County	
Design Flow:	Annual Average	0.04 MGD
Significant Industrial Loading?	None.	
Operator at Proper Grade?	Yes.	
Approved Pretreatment Program?	N/A	

Facility Description

The permittee owns and operates a two cell aerated lagoon system followed by two seepage cells. The system is designed to treat an annual average of 0.040 million gallons per day (MGD) and currently treats an average of 0.015 MGD. Five monitoring wells are currently installed within the property boundary of the facility.

Substantial Compliance Determination

Enforcement During Last Permit: A notice of noncompliance was sent in 2019 in response to missed manganese monitoring at well 807 (MW-7). Several follow-up phone conversations took place between 2019-2021 regarding the sampling of well 807, as it is a private well, and monitoring of that well is discontinued this permit term. The facility has completed all previously required actions as part of the enforcement process, except for providing a groundwater monitoring well site map. A schedule has been included this permit term for submittal of the well site map.

After a desk top review of all discharge monitoring reports, groundwater monitoring forms, land application reports, compliance schedule items, and a site visit on January 21, 2022, this facility has been found to be in substantial compliance with their current permit.

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**
701	Avg 0.026 MGD (November 2020-November 2021)	Influent samples shall be collected from the influent manhole prior to the first aerated lagoon.
001	Avg 0.016 MGD (November 2020-November 2021)	Effluent samples shall be collected at the point of discharge to the seepage cell.

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**
004	Did not land apply (2018-2020)	Liquid sludge that has accumulated in the lagoons.

Sample Point Designation for Groundwater Monitoring Systems			
System	**Sample Pt Number**	**Well Name**	**Comments**
Seepage Cells	801	MW-1 (801)	Point of Standard (POS)
	802	MW-2 (802)	Non-POS
	803	MW-3 (803)	Non-POS
	804	MW-4 (804)	Non-POS
	806	MW-6 (806)	Background

1 Influent - Proposed Monitoring

Sample Point Number: 701- Influent

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Continuous	Total Daily	
BOD5, Total		mg/L	2/Month	Grab	
Suspended Solids, Total		mg/L	2/Month	Grab	
Nitrogen, Total Kjeldahl		mg/L	Monthly	Grab	
Nitrogen, Ammonia (NH3-N) Total		mg/L	Monthly	Grab	
Nitrogen, Organic Total		mg/L	Monthly	Calculated	See Standard Requirements in the permit for Nitrogen Formulas

Changes from Previous Permit:

- No changes from the previous permit.

Explanation of Limits and Monitoring Requirements

Standard influent monitoring is required to evaluate treatment in accordance with s. NR 210.04, Wis. Adm. Code.

2 Land Treatment – Proposed Monitoring and Limitations

Sample Point Number: 001- Effluent to Seepage Cells

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Continuous	Total Daily	See Monthly Avg Flow - LT Calculation Section 2.2.1.1 in the permit
BOD5, Total	Monthly Avg	50 mg/L	2/Month	Grab	
Suspended Solids, Total		mg/L	2/Month	Grab	
pH Field		su	Weekly	Grab	
Nitrogen, Total Kjeldahl		mg/L	Monthly	Grab	
Nitrogen, Ammonia (NH3-N) Total		mg/L	Monthly	Grab	
Nitrogen, Organic Total		mg/L	Monthly	Calculated	See Standard Requirements in the permit for Nitrogen Formulas
Nitrogen, Nitrite + Nitrate Total		mg/L	Monthly	Grab	
Nitrogen, Total		mg/L	Monthly	Calculated	See Standard Requirements in the permit for Nitrogen Formulas
Solids, Total Dissolved		mg/L	Monthly	Grab	
Chloride		mg/L	Monthly	Grab	

Changes from Previous Permit:

- No changes from the previous permit.

Explanation of Limits and Monitoring Requirements

Requirements for land treatment of municipal wastewater are determined in accordance with ch. NR 206, Wis. Adm. Code. Refer to the Land Disposal System Evaluation Report, dated 1/13/22, by Woody Myers, in which no changes were recommended.

3 Groundwater – Proposed Monitoring and Limitations

3.1 Groundwater Monitoring System for Seepage Cells

Location of Monitoring system: Wells used for background groundwater quality and seepage cell impacts.

Wells to be Monitored: MW-1 (801), MW-2 (802), MW-3 (803), MW-4 (804), MW-6 (806)

Well Used to Calculate PALs: MW-6 (806)

Point of Standards Application Well(s): MW-1 (801)

Parameter	Units	Preventive Action Limit	Enforcement Standard	Frequency
Depth To Groundwater	feet	*****	N/A	Quarterly
Groundwater Elevation	feet MSL	*****	N/A	Quarterly
pH Field	su	8.3	N/A	Quarterly
Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	2.0	10	Quarterly
Nitrogen, Total Kjeldahl Dissolved	mg/L	*****	N/A	Quarterly
Nitrogen, Ammonia Dissolved	mg/L	0.97	9.7	Quarterly
Nitrogen, Organic Total	mg/L	6.3	N/A	Quarterly
Chloride Dissolved	mg/L	125	250	Quarterly
Solids, Total Dissolved	mg/L	780	N/A	Quarterly
Manganese Dissolved	ug/L	60	300	Quarterly

Changes from Previous Permit:

- Updated/changed well designations for wells MW-2 (802), MW-3 (803) and MW-6 (806).
- Discontinued monitoring of well MW-5 (805) and private well MW-7 (807).
- Increased the PAL for total dissolved solids from 778 to 780 mg/L.
- Increased/changed the monitoring frequency for well MW-4 (804) from “per agreement” to quarterly.

Explanation of Limits and Monitoring Requirements

Refer to the Land Disposal System Evaluation Report, dated 1/13/22, by Woody Myers. Groundwater limits and requirements are determined in accordance with ch. NR 140, Wis. Adm. Code. Indicator parameter Preventive Action Limit (PAL) values are established per s. NR 140.20, Wis. Adm. Code. Alternative Concentration Limits (ACL) as allowed under s. NR 140.28, Wis. Adm. Code, are established on a case-by-case basis; no ACLs are included in this permit. Additionally, the total dissolved solids PAL was increased in accordance with the memo for rounding up indicator parameter PAL and ACL values dated May 6, 1987.

4 Land Application - Proposed Monitoring and Limitations

Municipal Sludge Description						
Sample Point	**Sludge Class (A or B)**	**Sludge Type (Liquid or Cake)**	**Pathogen Reduction Method**	**Vector Attraction Method**	**Reuse Option**	**Amount Reused/Disposed (Dry Tons/Year)**
004	N/A	Liquid	N/A	N/A	Land Apply	0 Dry Tons/Year
Does sludge management demonstrate compliance? Yes.						
Is additional sludge storage required? No.						
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? No.						
Is a priority pollutant scan required? No.						

Sample Point Number: 004- Lagoon Sludge

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Once	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Once	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Once	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Once	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Once	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Once	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Once	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Once	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Once	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Once	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Once	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Once	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Once	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Once	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Once	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Once	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Once	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Once	Composite	
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	See Standard Requirements Section 6.6.6 in the permit

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	See Standard Requirements Section 6.6.6 in the permit

Changes from Previous Permit:

- No changes from the previous permit.

Explanation of Limits and Monitoring Requirements

Requirements for land application of municipal sludge are determined in accordance with ch. NR 204, Wis. Adm. Code. Ceiling and high quality limits for metals in sludge are specified in s. NR 204.07(5). Requirements for pathogens are specified in s. NR 204.07(6) and in s. NR 204.07 (7) for vector attraction requirements. Limitations for PCBs are addressed in s. NR 204.07(3)(k). Radium requirements are addressed in s. NR 204.07(3)(n).

5 Compliance Schedules

5.1 Groundwater Monitoring Well Confirmation

Required Action	Due Date
Submit Documentation: Submit documentation to confirm the date the facility ceased using monitoring well 807 (MW-7) to meet permit requirements.	04/30/2022

5.2 Groundwater Monitoring Well Site Map Submittal

Required Action	Due Date
Monitoring Well Site Map: Submit a site map in accordance with s. NR 141.065, Wis. Adm. Code. This site map must include a scale bar and directional arrow and accurately show site structures, property boundaries, nearby surface water and water supply wells and all site groundwater monitoring wells.	09/30/2022

5.3 Groundwater Monitoring Well Abandonment

Required Action	Due Date
Abandonment: Complete abandonment of monitoring well 805 (MW-5). The well shall be abandoned in accordance with s. NR 141.25, Wisconsin Administrative Code. (Note: Documentation of well abandonment must be submitted to the Department within 60 days of well abandonment.)	03/31/2023

5.4 Groundwater Monitoring Well Progress Reports

Required Action	Due Date
Progress Report Year 1: Continue to evaluate monitoring well 803 (MW-3) for nitrite + nitrate (as N) nitrogen exceedances and submit a progress report annually.	03/31/2023
Progress Report Year 2: Continue to evaluate monitoring well 803 (MW-3) for nitrite + nitrate (as	03/31/2024

N) nitrogen exceedances and submit a progress report annually.	
Progress Report Year 3: Continue to evaluate monitoring well 803 (MW-3) for nitrite + nitrate (as N) nitrogen exceedances and submit a progress report annually.	03/31/2025
Progress Report Year 4: Continue to evaluate monitoring well 803 (MW-3) for nitrite + nitrate (as N) nitrogen exceedances and submit a progress report annually.	03/31/2026
Progress Report Year 5: Continue to evaluate monitoring well 803 (MW-3) for nitrite + nitrate (as N) nitrogen exceedances and submit a progress report annually.	03/31/2027

5.5 Groundwater Monitoring Well Installation

Required Action	Due Date
Plans and Specifications: Submit plans and specifications for installation of a down-gradient monitoring well. The well should be placed due south of the absorption ponds. The well should not be closer than 50 feet to the southern edge of the ponds and if possible, approximately 250 feet south but no greater than 500 feet south. Plans and specifications shall be submitted for approval prior to the installation of the well.	03/31/2026
Installation: Complete well installation in accordance with ch. NR 141, Wisconsin Administrative Code. (Note: Documentation of well construction must be submitted to the Department within 60 days of well installation.)	03/31/2027

Explanation of Compliance Schedules

Groundwater Monitoring Well Confirmation – Since well 807 (MW-7) is a private well, this well cannot be abandoned but documentation is needed to confirm that the facility has ceased monitoring this well.

Groundwater Monitoring Well Site Map Submittal – This schedule is included as a follow-up item to enforcement correspondence during the last permit term and to meet the requirements of s. NR 141.065, Wis. Adm. Code.

Groundwater Monitoring Well Abandonment – Since monitoring is being discontinued at well 805 (MW-5) during the proposed permit term, it is appropriate to abandon well 805 (MW-5) in accordance with s. NR 141.25, Wis. Adm. Code.

Groundwater Monitoring Well Progress Reports – During the previous permit term there were significant exceedances of nitrate + nitrite observed in well 803 (MW-3). This schedule is included to evaluate those exceedances each year.

Groundwater Monitoring Well Installation – The Department concluded that groundwater monitoring wells do not appear to be properly placed based on the groundwater flow direction. This schedule has been included to require the installation of a down-gradient well.

Attachments:

NR 140 Groundwater Evaluation: Land Disposal System Evaluation Report, dated 1/13/22, by Woody Myers

Proposed Expiration Date:

March 31, 2027

Justification of Any Waivers from Permit Application Requirements:

No waivers from permit application requirements were granted.

Prepared By: Sarah Donoughe, Wastewater Specialist

Date: January 19, 2022